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1872

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PROCEEDINGS

OF THE

INAUGURATION OF THE BUILDING

FOR THE

DEPARTMENTS OF ARTS AND OF SCIENCE.

UNIVERSITY OF PENNSYLVANIA.

LD4546

1872



T. W. Richards, Arch.

Eng. by J. H. Miller

UNIVERSITY OF PENNSYLVANIA

COLLEGIATE AND SCIENTIFIC DEPARTMENTS

*We began with
W. Little's Bird Yard -*

University of Pennsylvania.

PROCEEDINGS

AT THE

PUBLIC INAUGURATION

OF THE

BUILDING ERECTED FOR THE

DEPARTMENTS OF ARTS AND OF SCIENCE,

October 11, 1872.

WITH THE

ADDRESSES MADE ON THE MORNING AND EVENING OF THAT DAY:

TO WHICH IS ADDED

A MEMORIAL NOTICE

OF

PROFESSOR JOHN F. FRAZER, LL.D.



PHILADELPHIA:
COLLINS, PRINTER, 705 JAYNE STREET.
1872.

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By transfer

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INTRODUCTION.

THE Trustees of the University confided to the Building Committee the arrangements for the formal delivery of the new College Building to the Faculties of the Departments of Arts and of Science.

The Committee, impressed with the importance of the objects sought to be accomplished by the improved and enlarged organization of the Institution, made such preparations as would provide an imposing public ceremonial in which the Trustees, the Faculties, and the Alumni should take prominent parts. This ceremonial occupied the morning of the 11th of October, and was honored with the presence of a large and highly respectable audience. In the evening a social gathering was held, at which representatives from several of the sister colleges and universities of the country were present, as well as citizens of various professions and business pursuits, who came together to discuss in an informal way the progress which the cause of liberal education was making in this country, and to encourage each other in the good work.

On Saturday the building was thrown open for the inspection of the public generally, and thus the Committee endeavored to fulfil the object of their special appointment.

It was deemed important that the history of the ceremonies should be fully reported and printed, and, in making up such a record, it has been thought best that

THE building erected by the Trustees of the University of Pennsylvania on Locust Street between Thirty-fourth and Thirty-sixth Streets, designed for the accommodation of the Departments of Arts and of Science, was opened for the reception of students at the beginning of the College year, September 16, 1872. It was hoped that the preparations made for their instruction in both Departments would then be fully completed, but it was found, that, notwithstanding the great efforts which had been made, the laboratories, the museums, the library, and some of the other rooms were not entirely fitted up and furnished by that time. The formal inauguration or dedication of the building was therefore postponed until Friday, October 11, 1872. On that day the Trustees invited many prominent gentlemen of this city and distinguished strangers to

be present at the opening ceremonies. It was a matter of regret that so many of the officers of foreign Colleges who had been invited were prevented from attending by the pressure of official duties at home. The Trustees were honored, however, by the presence of Henry Coppée, LL.D., President of Lehigh University, of the Rev. Dr. E. N. Potter, President of Union College, Schenectady, and of the Rev. Dr. Shields, representing the Faculty of the College of New Jersey, at Princeton. A procession was formed in the Library, composed of those who were to take part in the proceedings, together with the officers of foreign Colleges, the Board of Trustees, the different Faculties of the University, the special guests of the Trustees, and the Alumni, and moved at one o'clock to the Chapel, where seats had been reserved for them. The remainder of the Chapel was crowded by the friends of the Professors and students, among whom were many ladies.

The PROVOST then announced that RIGHT REV. BISHOP STEVENS would invoke the blessing of Almighty God.

BISHOP STEVENS then offered the following Prayer:—

THE PRAYER.

Almighty and Everlasting God, the fountain of all goodness, we adore thee as the One living and true God, infinite in all thine attributes and perfections, and worthy of the humble worship of all created beings. To thee all Angels cry aloud; the Heavens and all the powers therein. To thee Cherubim and Seraphim continually do cry, Holy, Holy, Holy, Lord God of Sabaoth, Heaven and Earth are full of the majesty of thy glory. The glorious company of the Apostles praise thee; the goodly fellowship of the Prophets praise thee. The noble army of Martyrs praise thee. The Holy Church throughout all the world doth acknowledge thee, the Father Everlasting.

We come before thee to ask thy blessing upon this University. May it be a fountain of sound wisdom and learning, wherein many generations of youthful minds shall be nurtured and disciplined in all wholesome science, literature, and art. Grant unto the Trustees the spirit of wise governance in the fulfilment of their trust. Be with thy servant the Provost; direct and strengthen him as the executive head of this institution; enlighten him as an instructor; make him judicious as a counsellor; and make him the friend and the guide of the youth committed to his care. Give to all the officers fidelity and zeal, diligence and prudence, firmness and patience in

the performance of their several duties. Let also the riches of thy grace and goodness descend upon all the students who shall resort hither. May they improve with careful diligence the great opportunities of mental culture here furnished, and be preserved from all error, vice, and immorality, and by thy Holy Spirit be effectually restrained from sin and excited to duty; and, as they are set in the midst of so many and great dangers that by reason of the frailty of their natures they cannot always stand upright, grant them such strength and protection as may support them in all dangers, and carry them through all temptations, and finally bring them into thy Heavenly Kingdom. These things, O Heavenly Father, and whatever else thou shalt see necessary and convenient to us, we humbly beg through the merits and mediation of thy Son Jesus Christ our Lord. To whom with thee and the Holy Ghost be all honor and glory, world without end. AMEN.

ADDRESS OF WILLIAM SELLERS, Esq.,
Chairman of the Building Committee.

LADIES AND GENTLEMEN:—

We have assembled here to-day to deliver to the Faculties of the Department of Arts and of the new Department of Science of the University of Pennsylvania, a building designed for their use; commenced when it was at least doubtful whether our means would justify the necessary expenditure, but in compliance with an urgent demand for increased accommodation. This demand could not be neglected, as the requirement for enlarged courses of instruction was forcing our youth to distant colleges, whilst the field in which the knowledge sought could be best obtained, and, when acquired, could be best utilized, was at our very doors.

The first step in this work is now happily accomplished; others, and most important ones, yet remain to be taken; but before entering upon these it may be well to note the events which have led us to this result, that if possible we may find encouragement for the work yet before us.

The preliminary movement, which has shown its first fruits in the building now before us, was taken at a meeting of the Board of Trustees held January 1, 1867, when a report was presented from a special committee, previously appointed,

to consider certain changes in the course of instruction in the Department of Arts. This report, after considering the condition of the Department, called attention to the great need of placing the Department of Agriculture, Arts, Mines, and Manufactures (the work in which had long been suspended) on a proper basis, and recommended that a committee should be appointed to solicit contributions to a new endowment, to enable the board to enlarge the instruction given in the Department of Arts, and also to reorganize the Department of Agriculture, Arts, Mines, and Manufactures. This recommendation was adopted, and a committee appointed. On the 6th of June, 1868, a resolution was passed by the Board of Trustees, requesting the Committee on endowment to inquire into the expediency of removing the University from its site in Ninth Street, and to report where a desirable location could be found.

On the 8th of October, 1868, the Committee presented an elaborate report, recommending the removal, and the purchase, if possible, of a portion of what was known as the Almshouse farm, in West Philadelphia.

On the 27th of October, 1868, the Board appointed a Committee for the purpose of negotiating with the city of Philadelphia for the purchase of from thirty to fifty acres of land in West Philadelphia, part of the property occupied as a farm for the city Almshouse. This com-

mittee consisted of Messrs. Fraley, McCall, Lex, Dr. Norris, Cresson, Welsh, and Judge Strong.

On the 4th of January, 1870, the Committee reported that after a protracted negotiation with the city authorities, they had obtained the passage of an ordinance whereby the city sold to the Trustees of the University a piece of ground (the present site) in West Philadelphia, containing ten and a quarter acres, for eight thousand dollars per acre, and on the same day the Board passed resolutions ratifying the purchase. On the 21st day of May, 1870, the deed to the Trustees was duly executed by the Mayor of the city, Hon. D. M. Fox, and the consideration money, \$82,184, paid. This amount was raised partly by mortgage and partly by applying to the same purpose the loans of the United States and the city of Philadelphia, held by the Trustees.

On the 1st of March, 1870, the Committee on the Department of Agriculture, Arts, Mines, and Manufactures was requested to report to the Board a plan for the improvement of the ground. This Committee called to their aid the instructor of drawing in the University, Mr. T. W. Richards, and on the 3d day of May, 1870, laid before the Board the general features of a plan for the new University building, which would secure ample accommodations for both the Departments of Arts and the Department of Science. On the 10th day of May, the general features of the plans presented were approved by the Board, and referred back to the Committee for completion.

On the 25th of May, at the request of the Committee, the Board reconsidered its resolutions approving the plans, and resolved to authorize the Committee to invite plans, specifications, and estimates from the architects of this city. A prize of \$800 was offered to the first in merit, \$400 to the second, and \$300 to the third.

On the 20th of September, the Committee presented plans to the Board from Mr. Windrim and Mr. Richards, both of such merit that the Board resolved to divide the first and second premiums equally between them. Mr. T. W. Richards was at this meeting elected the architect.

As neither plan exactly met the views of the Committee and the Board, they were at this meeting referred back to the Committee to report a revised plan, accompanied by proposals from contractors for the completion of the same.

Under the supervision of the Committee, Mr. Richards proceeded to prepare a revised plan; and on the 28th of February, 1871, it was laid before the Board, together with the proposals and estimates of thirteen contractors.

The Board resolved to adopt the plan, and awarded the contract to Messrs. Wm. Struthers & Sons, for the sum of \$231,900, the building to be completed by the 1st of August, 1872.

Of the manner in which the architect has executed his work as an artist, you to-day can form your own opinion; but of his energy, devotion, and conscientiousness, which have contributed so much to the general result, the members of the

Committee who have been in constant intercourse with him are the best, as they are the most willing, witnesses.

At the meeting of the Board held March 7th, 1871, a Building Committee was appointed, consisting of Messrs. Sellers, Cresson, Fraley, Henry, Welsh, Browne, and Merrick; and on the 15th of June, 1871, the corner stone of the new building was laid with appropriate ceremonies. On the 17th of September, 1872, the building as it now stands was accepted by the Committee from the contractor, and the work of completing the furnishing for its intended purpose has been forwarded as rapidly as possible, under the supervision of the architect. During the construction it was found necessary to make certain additions amounting to \$4010 $\frac{4}{10}$; so that the cost of the entire building, exclusive of the special fittings required for the different laboratories, museums, cabinets, and the furniture, has been \$235,910 $\frac{4}{10}$.

The design of the building is what is known as Collegiate Gothic. The structure consists of a main central building, with connecting eastern and western wings, which are completed by towers.

The front is on Locust Street, and extends 254 feet in length, by a depth of 102 feet 2 inches. These measurements are exclusive of towers, bay windows, buttresses, &c. By the projection of the central building there is an addition to the depth at that point of 21 feet 10

inches; the whole depth at the centre being 124 feet. The western wing has been arranged for the use of the Department of Arts, the eastern for that of the Department of Science, whilst certain portions of the centre building are intended for the common use of both departments, such as the Chapel, Library, Assembly-room, &c. Beside these, the building contains sixteen rooms, devoted to instruction in Chemistry and its applications, four to Physics, six to Geology and Mining, four to Civil and Mechanical Engineering, three to Drawing, three to Mathematics, one each to English Literature, History, Intellectual and Moral Philosophy, Greek, Latin, French, German, Rhetoric, and Oratory. The Laboratories have been fitted up with the most complete modern apparatus and models; museums and other approved means of illustration have been abundantly provided.

The object of the Trustees has been to construct a building which would give the largest and most convenient accommodation for the purposes of instruction in both departments. According to the present system of instruction in the Application of Science to the Arts, a large number of rooms is required to illustrate fully the various processes; and the Committee have not hesitated for such purposes to provide accommodations which they believe are as ample as those to be found in any similar institution in this country. Such arrangements are necessarily

costly, but the constant desire of the Trustees has been to do this work thoroughly and well.

While such extensive arrangements have been made for instruction in the new Department of Science, the Committee has not neglected the claims of the other department, the oldest in the University, that of Arts. Large recitation and lecture-rooms, well-lighted and ventilated, have been provided for the classes who attend the instruction given by the professors in this Department. All that has been done has been undertaken with a view of affording to young men the best opportunity of receiving the highest training in the various branches of a liberal education.

In order to carry out fully the intentions of the Trustees, the older department has been improved, enlarged, and rendered more efficient; while a system of instruction has been carefully matured for the new, based upon the experience of the most successful schools of science in the country, and differing in some respects from any. To insure the success of all our plans, gentlemen of the highest reputation as men of science have been selected as professors in the new school, and they are now giving their zealous co-operation in completing our work.

But something more is needed besides a commodious building and a learned and zealous body of professors. The expenditure of money, where preparations have been made upon so liberal a scale, must necessarily be large. The funds required for the erection and furnishing of the

building were obtained by creating a mortgage of \$300,000 upon all the property of the University. It was expected that this debt would be discharged whenever the Ninth Street property could be disposed of, and it is believed this will be accomplished at an early day. It was hoped that the largely increased expenditure which the new course of instruction will entail upon us would be supplied by our endowment fund, but I regret to say this is not yet what we had hoped for; we feel assured, however, that, having now provided ample accommodations and large facilities for instruction, the necessary means for carrying on our work in a liberal manner will not be withheld.

And now, Mr. Provost and gentlemen of the faculties, I hand over our work to your care and use, and, in so doing, permit me to thank you for the assistance you have thus far rendered us, and to promise for you, in advance, the thanks of all men, as the importance of your labors and the zeal with which you discharge your duties become apparent to them.

PROVOST'S ADDRESS.

MR. CHAIRMAN AND GENTLEMEN
OF THE BOARD OF TRUSTEES:—

The Faculties of the Department of Arts and of the Department of Science desire to join most heartily in the congratulations which are so fitting on this auspicious occasion. What has been to many of us a long-cherished dream has at last assumed the shape of a living, actual reality.

To-day we come before the world with the formal announcement that we have here at last a true University, complete in all its parts, in which men may receive in all the various departments of human knowledge that training and liberal culture which shall fit them to be the leaders and guides of their fellow-men. Such an event is not only memorable in the history of the University, but it is also one, if rightly apprehended, of great significance in the history of the community in which we live. For, if it be true that we have here and now a University able and ready to do the work which such an institution should do, and the people of Philadelphia are fully impressed with that belief, then, indeed, it is not easy to exaggerate the importance of the event, or over-estimate the far-reaching results of what has been done, to us and to those who are to come after us.

The work of which we celebrate to-day the completion was begun, gentlemen, by your predecessors one hundred and seventeen years ago, for the germ which your labors have developed is found in the plan of the "College or Seminary of Universal Learning," chartered in 1755. In its earlier years, as was natural, the fruit borne by the tree which sprang from that germ was not very abundant, but, such as it was, it was the choicest then grown on American soil.

In 1765, that illustrious body, the Medical Faculty of the University—illustrious from the fame of its founders and teachers, and illustrious from the great number of eminent men who, for more than a century, have received their earliest professional training from it—was organized. Still later, in 1789, the trustees, keeping in full view the University idea, established another learned Faculty, that of the Law Department. It needed but one more link to complete the circle of the human sciences (for with Theology, *Scientia divina*, our charter forbade us to intermeddle), and that was a department in which the sciences of nature should be taught in their applications to the arts of life. The organization of such a department has seemed to you not only the natural outgrowth of the true University principle, but as eminently fitting for the needs of the times.

We celebrate to-day not merely your fulfillment of the promise held out by our earliest charter, but, when you dedicate this noble build-

ing to the use of the two Faculties, we gladly hail it as the strongest proof of the earnestness of your desire, that that promise shall be kept in the largest and most liberal way. What has been done in the erection of this building to aid us to make our work here true, and real, and fruitful, each one who hears me to-day may judge for himself.

My colleagues and myself know something of the unwearied zeal and devotion you have brought to the accomplishment of this task. We know that you have given us here convenient means of instruction unsurpassed anywhere in this country. We know that you have been in constant and active sympathy with all our needs, and our hearts gratefully respond to all that has been done for us. We are fully sensible that the hopes which you cherish for the success of your great enterprise rest mainly on your firm belief, that we, who are the teachers here, are imbued with something of your own earnestness and enthusiasm. You have rightly judged; we shall help you to reap the reward you seek—the only possible reward for such unselfish toil—the consciousness that those for whose sake it has all been done are enjoying fully the fruit of your labors.

We accept, then, the trust which you have imposed upon us, and which you have given us such ample means of executing. To these stately halls an unexpectedly large number of young men, attracted by what you have done for them,

have already come; and there is no reason to doubt that an increasing number will follow them when it is known how liberally you have provided for an ever-increasing need. Be it ours to train these young men in a knowledge and love of Truth, of Right, and of Duty. Let us not merely unfold to them the mysteries of nature, but let us teach them something of that grand central figure in nature's realm, of man, his capacities, his history, his responsibilities, his destiny, that so they may be led to attain to that higher knowledge concerning the power and beneficence of the Almighty Being by whom and in whom both nature and man live, and move, and have their being. Thus shall we best complete the work which you have begun, and erect the most enduring monument to commemorate your labors.

ADDRESS OF PROFESSOR LESLEY,
Dean of the Faculty of the Department of Science.

GENTLEMEN OF THE BOARD OF TRUSTEES:—

Whatever is good and beautiful is worthy of respect and affection without comparison; and the good and beautiful are of all ages, the common property of mankind, of common origin, and harmonious. Philosophy, Belles-lettres, and Physical Science have always been fruit of the same tree. To observe, to speculate, to experiment, and to construct are cognate and coequal faculties of mind. In the dim dawn of history we discern their complicated phenomena. No man was ever more practical than Confucius the father of Chinese letters. Medicine, Chemistry, Architecture, Dentistry, Mining, Engineering, and Metallurgy flourished in Egypt under the influence of the most elaborate ritual of religion, while Pentaour was inscribing his immortal poem on the walls of Carnac. Greece was not more glorified by Socrates, Plato, and Herodotus, than by Aristotle, Anaximander, Democritus, and the physicists who made collections of fossils, and engineers who mined the lead veins of Laurium. Poetry, history, chemistry, and the principles of the mechanic arts flourished equally and together under the califfs of Bagdad and the sheriffs of Cordova. And when the long and slow proces-

sion of human knowledge reached western and northern Europe, gathering in its march the treasures of fifty centuries to deposit them in universities and museums, the laboratories and factories of the modern Christian world, they were carried together by the same beasts of burden, and guided by the same pioneers. In distributing the prizes of renown, what judge could decide between the merits of Paracelsus and Palissy, between Boehme and Boerhaave; between Reuchlin and Erasmus on one hand, and Verulam, Da Vinci, Buonarrotti, and Vasari on the other? Are not the noblest men of our own day equally brilliant for imagination and science; for the wisdom of practical life, and that love of fair expression which makes the artist and the scholar? The world is mature; it feels its constitutional powers; it pants for action; it devises and executes a thousand monuments; it criticises nature, subjects the elements, demands service and use of all things, inspires matter with its own ideas, and sets the surface of the earth to rights for the comfort and convenience of all. This is its science. These are its physical sciences.

But does the manly time forget its boyhood's days? When was ever so much loving thought bestowed on the records of bygone times? Christendom resounds with poetry. The nineteenth century sings at its work. The old theology is as fresh and dear as ever to human hearts. Homer and Virgil can never be supplanted by Tennyson, Whittier, Lowell, and Long-

fellow. More scholars now busy themselves with the ancient languages than in any former age, and translations of the choicest literature of India and China are added to gratify the classical taste of an age most wrongfully accused of forgetting its old sweet joys to smother its soul in a slough of gross materialism. This age of new-born sciences is also an age of philosophies born again. That apparent opposition to science, of which we sometimes hear complaints, is neither more nor less than the inextinguishable affection of the intellect of our race for all noble thinking, for all exquisite expression, for the ideal and the absolute outside the limits of experimental demonstration. Darwinism itself is but an unconscious inward reaction against the supremacy of the microscope of the naturalist and the chemist's scales. After all our nomenclatures have been formulated; after all the laws of nature have been proved by facts, fresh outbursts of the heart of the scholar astonish the sciences, and the deep fires of æsthetic sentiment are seen preserving their activity. Men will always be poets. The University will never abandon its "humanities." No incomings of physical science can exile or dethrone learning. But as by the varied immigrations to this new world a higher composite society obtains existence, so the harmonious interfusion of learning and science lifts the modern University into a region of thought, sentiment, and power above all that former ages have thought possible.

Gentlemen, in enlarging the instruction of this institution, you have obeyed the wish of the times. In doubling the range of its curriculum you have placed it in harmony with the spirit of education elsewhere; you have answered a lawful call of this large city, and of the State to which we owe allegiance. Nor have you moved in the matter a day too soon. The want of an adequate and efficient apparatus for training the young scientifically for business, as chemists, architects, engineers, geologists, metallurgists, superintendents of transportation, inventors, and discoverers of new forces and applicable powers in the material world, here in Philadelphia, has been emphasized already by the conspicuous success of our New Department of Science. You cannot go back; the ships have been burnt; the enterprise must be pursued greatly; all eyes are already watching your progress.

This is no new idea, however, but only a fresh effort to realize the original thoughts of the founders of this University. Philadelphia for many years has been the acknowledged principal centre of physical science in America. From the time of Franklin, names of distinction have been connected with its name; some of them, like Rittenhouse, Ewing, Smith, Bache, and Hare, were connected personally with the University. The principles of physical science have always been taught within its walls. Before the breaking out of the late war, a special course of scientific instruction was provided for those students

who wished to fit themselves for the practical arts. But no adequate accommodations could be furnished for the purpose in the now deserted building in Ninth Street.

Here a new and finer career is offered. We have to thank the generous enthusiasm of enlightened citizens and the persevering courage of the Board of Trustees for making that possible which has been a long-cherished dream of the Alumni of our venerable college. Now, at last, we have room to work. Five chemical laboratories have been given to us. Two museums are provided for the students' use, with 15,000 choice specimens of minerals and fossils. We have already begun to organize collections of building stones, coals, ores, furnace products, whatever can illustrate work in the field, in the furnace, and in the mine. We are provided with rooms for drawing, for the construction of model buildings and machinery, and the processes of metallurgy.

It is true that months of labor are still demanded for bringing this equipment to its highest efficiency, and we need a hundred thousand dollars more to supplement it with a working physical laboratory, and a complete museum of comparative zoology and American palæontology, such as is ready to be furnished on call from the great collections of James Hall, as well as to endow chairs of fossil botany and zoology, of railroad transportation, etc., to make our faculty complete. But the pride and sagacity of the

business men of Philadelphia may be relied on not to stop short of the ideal perfection of so important an instrumentality for the prosperity of the city.

Gentlemen, none in our age needs to be reminded that while the acts of duty are fugitive, their consequences penetrate time to the remotest limits. How exalted then should be our views! how far-reaching our plans! how wide and deep our comprehension of the useful, and how absolute our personal loyalty to the happy and honorable responsibilities of the times in which God casts our lot! Among the monuments our fathers built, this University is one; and so long as it can grow, like a royal palace of the middle ages, by the commodious and splendid additions of successive dynasties, we also may partake in the work of our fathers, and, like them, be benefactors of posterity.

HON. JAMES R. LUDLOW, LL.D., then made the presentation of the Memorial Windows and Portraits to the Trustees, and in doing so said:—

GENTLEMEN OF THE BOARD OF TRUSTEES:—

Auspicious was that day upon which the Trustees of the University of Pennsylvania determined to erect this building. With wise forethought they selected this spot, and the City Councils, with a liberality which will always be commended, agreed to sell this tract of land to this institution upon most liberal terms. As if by magic the walls of this beautiful edifice have been reared, and now it stands an ornament to the city, and to be dedicated to the cause of enlightened education. Massive as is this structure, something more had to be accomplished. To be complete, its history, in part at least, must be written upon its walls; this the friends of the institution determined to do, and that work has also been completed. The thought was a happy one, for among the living you may look for the reproduction of the scenes and men of the past, not only upon the printed page, but also on canvass, in marble, and other works of art. Here, and at a glance, shall the visitor learn of the past, as it is inseparably connected with this institution. Here, as the eye falls upon each window or upon the walls of the building, the mind will instinc-

tively revert to other days; a familiar name or form suggests at once, not only the actor but that which he accomplished, and thus, by the well-known law of association, history shall be again written as it is connected with this institution.

In the brief time allotted to me for the preparation of this discourse, I can do little more than present to you a sketch of the men whose portraits adorn these walls, of the meaning of these memorial windows, and of the deeds which are here perpetuated.

The subject will be treated in its historical and chronological order.

And first of all let us turn to the Franklin memorial window—the gift of the Alumni of the institution, in honor of the founder of the College of Philadelphia.

Here and now it is only necessary to mention the name of Benjamin Franklin. Who he was, and what he did for science, for his country, and for the world is known to every boy in the land. What did he do for us is the point to which we shall direct your attention.

In 1749, by the direct efforts of this illustrious man, his friends subscribed £800 for the endowment of an academy. A building had been erected in Fourth Street below Arch; it was used for the school, and it stood until very recently, when it was removed, and in its place the present structure was built.

How well many of you, with the speaker, remember the old Academy; there we received our

earliest education, and if we did not always rejoice to enter its walls, it was not because its earliest history was not dear to us.

In the year 1755, a charter was granted for the "College, Academy, and Charity School of Philadelphia." An examination will establish the fact that this institution was the sixth in order of age of all the colleges in the United States, William and Mary, Harvard, Yale, King's (now Columbia), at New York, and Princeton being the only seniors. Franklin was not only a Trustee until 1790, the year of his death, but when in the country devoted his time, his talents, and his energies to this institution. Even the early record books yet remain in his handwriting as Secretary of the College. Look upon that portrait and behold your earliest benefactor and friend. What a flood of history pours in upon us from that memorial window!

See how upon the left hand the artist has reproduced the past with its wonderful story.

There is the coat of arms of the Penn family, by whom the first charter was granted, a representation of the devastation produced by lightning, and, last of all, a picture of the hand-press used by Franklin in London.

Now gaze upon the right-hand side of the window, and the present is before you.

There is the coat of arms of the Commonwealth of Pennsylvania, by which the present charter was granted.

Look again, and you will not see the simple

kite handled by Franklin, but a representation of the telegraph—electricity made useful to man, and in place of the old hand-press you will observe that most wonderful production of human genius, the last improved steam printing press. I am informed by a most competent judge, that upon the machines now in use in any of our first-class printing establishments, more than the largest edition of any newspaper published in Franklin's time can be printed in one minute.

Reflect upon the past and the present, think only of electricity and of the press, and then tell me if this window does not beautifully, wisely, and justly, do honor to the memory of the founder of this College, the immortal Benjamin Franklin.

From the window we now turn to the portrait of Rev. William Smith, D.D., the first Provost of the College. The foremost scholar of his day in this province, it was no wonder that Franklin called him to the high office of Provost in the year 1755, and although his active duties ceased because of an attempted repeal of the charter in 1779, he held office until the year 1791. The history of Dr. Smith is interwoven with the history of the College; as a preacher he was distinguished for eloquence, as a teacher he was unsurpassed, as a man he was not only indefatigable, but what he designed to do he did with a will, and with such a consummate skill that he generally accomplished his object.

Notwithstanding the unfortunate difficulties which at one time embarrassed the Provost and

the institution, the minutes and acts of the Board of Trustees prove that his great merit was known, and, to a certain extent, appreciated. Not only did Dr. Smith devote his richly cultivated mind and vast energy to the instruction of youth and to the every-day wants of the College, but, by request of the Trustees, he went abroad, and in England raised £8000 for the institution in the years 1762-3; while by other means and in other places he added to this large sum £12,000, thus by his individual efforts adding £20,000 to the funds of the College.

As may be supposed, students flocked to the city, and in 1773 as many as three hundred pupils were instructed in the collegiate, medical, and academic schools.

We must not forget now to turn our attention to another memorial window. It has been erected in honor to the Penn family. What more suitable place than this could have been selected to perpetuate the memory of William Penn? Of comprehensive views, boundless liberality, large benevolence, and unswerving integrity, William Penn was a man imbued with deep religious convictions; he acted upon principle, and sought by the gentlest means within his power to do that which before had been accomplished only by the sword.

Men may differ as to particular creeds and forms of faith. The founder of this Commonwealth believed in and acted upon a system of faith which requires a strong intellect to com-

prehend, for, while it dispenses with mere form, without adventitious aid it appeals directly to the intellect, the heart, and the soul of man, as it deals with the unseen and with things eternal.

Here in this metropolis, in the city which he founded and loved, and in this building dedicated to the cause of human knowledge, let the name of the founder of the Commonwealth be held in reverence, and his fame be everlasting.

Of Thomas Penn, a son of William, we must here speak, for the College owes him a debt of gratitude it can never repay. Benjamin Franklin and Dr. Smith labored with all their might, but even the efforts of these giants might have failed but for the aid of Thomas Penn.

The influence of this gentleman was freely exerted with persons of rank and fortune in England, when, in 1762-3, Dr. Smith raised a large sum of money there, while this munificent patron of learning contributed £4500 in money, and 2500 acres of land in Bucks County, Pennsylvania.

Hand down to posterity the name of the father and son. What they did for mankind will live when the sword shall be forgotten; when the nations of the earth shall assemble as one brotherhood, and when their several emblems of power and authority shall gracefully descend before the advancing banner of the *Prince of Peace*.

There is another name almost forgotten, and another window in the main hall, by the stairway, soon to be finished, which is to be constructed in

honor of a man whose modest merit cannot, by the learned world, be unknown. When, in 1746, the wonderful properties of electricity were comparatively unknown, four young men, Benjamin Franklin, Thomas Hopkinson, Philip Syng, and another, devoted their leisure moments to the investigation of this wonderful subject; each made discoveries, and henceforth the name of EBENEZER KINNERSLEY became familiar to the scientific men of Europe.

Dr. Franklin, the friend of Kinnersley, who knew his eminent worth, induced him to accept the position of head master in the English school, at the College of Philadelphia, in 1753, and two years afterwards, to wit, on the 11th of July, 1755, he was chosen professor of the English tongue and of oratory, a position, I believe, afterwards held by such men as Rev. Dr. Jacob Duche, Rev. Dr. William Rogers, and our own lamented Henry Reed.

Professor Kinnersley continued to hold his professorship until October 17, 1772, when his failing health caused him to resign his office, and on February 2, 1773, the Trustees passed a resolution regretting his loss to the College. Dr. Smith, in his eulogy on Franklin, names Professor Kinnersley as the third professor, and then adds, "there is in the experiment-room an electrical apparatus, the property of one of the professors, chiefly his own invention, and perhaps the completest of its kind in the world." This apparatus was afterward purchased by the Trus-

tees, and a part is, I think, still preserved. Dr. Priestly, in his history of electricity (pp. 187-190), writing in 1767, says: "While we are attending to what was done by Dr. Franklin at Philadelphia, we must by no means overlook what was done by Mr. Kinnersley, the doctor's friend," and again "some of his observations, of which an account is given in the doctor's letters, are very curious, and some later accounts which he himself has transmitted to England seem to promise that, if he continues his electrical inquiries, his name, after that of his friend, will be second to few in the history of electricity."

Born in England on the 30th day of November, 1711, he, with his father, a Baptist clergyman, came to America and settled in Lower Dublin, Pa. He was ordained as a Baptist minister in 1743, but was never the pastor of a church. He died on the 4th day of July, A. D. 1778, at the age of 67 years. His remains are interred in the cemetery attached to the Lower Dublin Baptist Church.

It has thus come to pass, that in this new building, and in an institution in which he had once been an honored instructor, and to the prosperity of which he had so greatly contributed, a grateful generation, appreciating his modest worth, perpetuates his name, and deems it a privilege so to do.

At this point in these remarks, we pause to say that the windows and portraits heretofore speci-

fied, illustrate the pre-revolutionary history of this institution.

Next in order of time must be named the great mechanician and astronomer, David Rittenhouse. This very remarkable man deserves something more than a passing notice.

He was not only an American, but a native of this county, and was born upon the 8th of April, 1732, in the then township of Roxborough, now in the Twenty-first Ward of the city of Philadelphia. His great-grandfather, William, established, about the year 1690, the first paper-mill in British America, upon a small stream called "Paper-Mill Run," in Roxborough. When the subject of this sketch was seventeen years of age, he made a wooden clock, and soon after constructed a twenty-four hour clock.

Such mechanical genius could not be overlooked or neglected, and his wise father soon purchased for him such tools as were required in the business of clock-making.

This natural-born mechanic and man of real genius; while following his pursuits, studied mathematics, and soon invented his celebrated *Orrery* or *Planetarium*. When this wonderful piece of mechanism passed by purchase, I believe, into the possession of Princeton College, its removal was regarded as a public calamity, and a new one was ordered by the Legislature of the State, to be paid for at the public expense.

It was presented to the College, and now remains in its possession. When the British occu-

pied Philadelphia, Sir William Howe detailed a special guard to protect this valuable instrument from possible injury.

On the 7th of January, 1769, the American Philosophical Society appointed the great astronomer one of thirteen gentlemen to observe the transit of Venus over the sun's disk, which was to take place on the 3d day of June, 1769.

An observatory was erected at Norriton, Montgomery County, chiefly for this purpose. Doctor William Smith, and John Lukens, the Surveyor-General of the province, were appointed to assist Mr. Rittenhouse. Dr. Rush, in his eulogy upon Rittenhouse, says:—

“We are naturally led here to take a view of our philosopher, with his associates, in their preparation to observe a phenomenon which had never been seen but twice before by any inhabitant of our earth, and which would never be seen again by any person then living, and on which depended very important astronomical consequences.

“The night before the long-expected day, was probably passed in a degree of solicitude which precluded sleep. How great must have been their joy when they beheld the morning sun, and the whole horizon without a cloud.

“In pensive silence and trembling anxiety they waited for the predicted moment of observation. It came, and brought with it all that had been wished for and expected by those who saw it. In our philosopher it excited in the instant of one of

the contacts of the planet with the sun, an emotion of delight so exquisite and powerful as to induce fainting." "This," says Dr. Rush, "will readily be believed by those who have known the extent of pleasure which attends the discovery or first perception of Truth."

So great was the fame of our astronomer, that we find him employed, at brief intervals, from 1763 to 1785, in establishing boundary lines, and fixing the limits of great Provinces and States.

He was the Treasurer of this State for twelve years, and a trustee of the loan office for ten.

In 1791, Dr. Rittenhouse (who had then received the degrees of A.M. and LL.D., and who had succeeded Dr. Franklin as President of the American Philosophical Society) was a trustee of the College; he had held office as far back as 1779.

Upon the 7th day of January, 1780, he was elected Vice-Provost of the University, having been appointed Professor of Astronomy December 16th, 1779. Dr. Rittenhouse resigned these positions on the 18th day of April, 1782.

Ten years afterward, in 1792, George Washington appointed Dr. R. the first Director of the Mint, and the first coining-press ever constructed here was made after his design.

In 1778, Jefferson, in a letter written to Rittenhouse, says: "You should consider that the world has but one Rittenhouse, and that it never had one before. The amazing mechanical representation of the solar system (referring to the

Planetarium or Orrery), which you conceived and executed, has never been surpassed by any but the works of which it is a copy."

In his *Notes on Virginia*, written in 1781, he says: "In war, we produced a Washington. * * * In physics, a Franklin. * * * We have supposed Mr. Rittenhouse second to no astronomer living; that in genius he must be the first, because self-taught. As an artist he has exhibited as great a proof of mechanical genius as the world ever produced. He has not indeed made a world, but he has by imitation approached nearer its Maker than any man who has lived from the creation to this day." This great man died at his house, at the northwest corner of Seventh and Arch Streets, on Sunday, the 26th day of June, 1796, in the 65th year of his age.

How well yonder memorial window, the gift of the alumni, perpetuates the name and fame of our illustrious Vice-Provost you may judge, when I tell you that you will find pictured there the coining-press, the Orrery, and a representation of the transit of Venus. What more can be said of the man, of his genius, or of his deeds, all inseparably associated with the University of Pennsylvania!

The Rev. John Ewing, D.D., whose portrait looks down upon you from these walls, was the first Provost of the University, as distinguished from the College, under the charter of 1779, and he held that position until the year 1802.

This most distinguished Presbyterian clergy-

man was born in Nottingham township, Cecil County, Md., June 22, 1732. It has been said of him that in mathematics and astronomy, in Latin, Greek, Hebrew, and Logic, in Metaphysics and moral Philosophy, he was probably more accomplished than any man of his day in the United States. As a mathematician, the remark is absolutely true. When Dr. William Smith, the Provost, visited England, Dr. Ewing, at the age of 26, was employed to instruct the philosophical classes in the College of Philadelphia.

In 1773 he visited England, and the University of Edinburgh conferred upon him the degree of D.D.

My friend, Horatio Gates Jones, Esq., of our bar, to whom I am indebted for many facts and dates connected with the most prominent men of the University, calls my attention to an anecdote which had escaped my observation; it is worthy of notice. When Dr. Ewing visited England, he met the celebrated Dr. Johnson at the house of Mr. Dilly, the wealthy and hospitable bookseller of London. Dr. Johnson was bitter against the colonies, and, as usual, was exceedingly crabbed and stern. The contest with America came up for discussion, and when Dr. Ewing, the only American present, was appealed to, he began to defend the colonies. Dr. Johnson's feelings were aroused, and the epithets rebels and scoundrels were freely applied to the colonists. At length Dr. Johnson rudely said to Dr. Ewing, "Sir, what do you know in America?"

You never *read*; you have no books there.” “Pardon me, sir,” replied Dr. Ewing, “we have read the *Rambler*.” This civility instantly pacified the Doctor, and they thereupon sat up until midnight in amiable, eloquent, and interesting conversation. Dr. Ewing died Sept. 8th, 1802, aged 71.

The vacant Provostship was not filled until the year 1806, when John McDowell, LL.D., of Pennsylvania, was elected to the professorship of natural philosophy, and at the end of the year, or early in 1807, he was elected Provost. I have been unable to find any detail of facts in connection with this gentleman; it is certain, however, that his health was feeble, and in four years he was obliged to resign.

His attachment, says Dr. Wood, in his history of the University, remained unabated. He supplied a temporary vacancy caused by the resignation of his successor, and by his will he bequeathed his books, which form a valuable portion of the library, to the institution.

Dr. Andrews, who had for nearly twenty years (from 1791 to 1810) occupied the position of Vice-Provost, and had been a professor from 1789, was in December, 1810, elected Provost. He died March 29th, 1813, at the age of 67 years. He was a native of Maryland, and an ordained minister of the Protestant Episcopal Church. At seventeen he was sent to the College and Academy of Philadelphia, and graduated in 1765.

The subject of this sketch is described as a man

of rare classical knowledge; an indefatigable worker, and an excellent teacher; if not endowed with the splendid genius, he was nevertheless amply qualified to discharge those duties which develop strength of mind, high-toned morality, and solid learning.

In the order of time, and of succession, we now mention the name of Rev. Frederick Beasley, D.D. Born in 1777, near Edinton, S. C., he graduated at Princeton, with high honor, in 1797. Under Dr. Samuel Stanhope Smith, he studied theology. In 1801, he was ordained a deacon in the Protestant Episcopal Church, by Bishop Moore, of New York, and a priest in 1802. As a minister, he officiated at Elizabethtown, N. J., St. Peter's, Albany, and St. Paul's, Baltimore, where he remained until July, 1813, when he accepted the position of Provost of the University. The degree of D.D. was conferred upon him by Columbia College and the University. Respected and learned, Dr. Beasley continued to discharge his duties for fifteen years. He resigned his office, to accept a pastorate at Trenton, N. J. Failing health, after a time, obliged him to retire from active duty, but he devoted his leisure moments to literary and theological studies until his sudden death, upon November 1, 1845.

When the University, strictly so called, was established, the new trustees met in December, 1779, and steps were at once taken to organize the schools.

James Cannon was appointed to the chair of

mathematics. He in a few years resigned, and then the name of Robert Patterson appears as his successor in office. Subsequently a reorganization took place, and in the department of arts five separate schools were established, each being placed under the care of a professor. The mathematical school fell to the lot of Robert Patterson, LL.D. For thirty-five years he held the office.

When Dr. McDowell died, he (Dr. P.) united to the chair of mathematics that of natural philosophy, and in 1810 was elected Vice-Provost, in the place of Dr. Andrews, who had been made Provost; he held this office from 1810 to 1813. The subject of this sketch was an Irishman by birth. He came here before the Revolution, in 1768; was an Assistant-Surgeon and Brigade Major in the Revolution, from 1776 to 1778; and he clung with the utmost tenacity to those pure principles of republican government which have made his name, and those of more than one of his relatives and descendants, dear to the American citizen. Dr. Patterson was the President of the American Philosophical Society in 1819, and the Director of the Mint from 1805 to 1824. In the last-named year he died, aged 82. With a bright intellect, and a mind clear enough to comprehend, and accurate enough to master the most difficult problems in mathematics, he was renowned for his solidity of understanding and skill as a teacher, and, when at an advanced age he retired,

his resignation was followed with the regrets and benedictions of the public.

It has been said of him "that he united the christian with the philosopher, and at a good old age went down to the grave with the full assurance that he would rise again to a happier and more exalted existence."

The elder Patterson died, but before his death he enjoyed a privilege which seldom falls to the lot of man. He lived long enough to see his son fill his place, and under his own eye perpetuate his virtues, talents, and learning.

Dr. Robert M. Patterson, the son, was born in this city, March 23d, 1787. He graduated at the University, as a Bachelor of Arts, in 1804, and in a few years later, as a Doctor of Medicine. His professional studies were pursued in Paris and London.

From 1813 to 1814, he was a Professor of Natural Philosophy in the University, and from 1814 to 1828 he filled the chairs of Mathematics, Natural Philosophy and Chemistry, and in the spring of 1814 was elected Vice-Provost. In 1828, he removed to Virginia, where, from 1828 to 1835, he occupied, with distinction, the chair of Natural Philosophy in the University of that State.

Returning to Philadelphia, Dr. P. accepted an appointment as Director of the Mint, an office he held from 1835 to 1851. He was elected President of the American Philosophical Society in 1845, and declined the position, but subsequently,

in 1849, he was re-elected, and accepted the office. He died on the 5th of September, 1854.

Dr. Patterson was a gifted man, and in mental characteristics so evenly balanced as to render it a difficult task to do justice to his memory.

As a teacher, one of his most distinguished pupils, now a professor here, testifies to his great capacity, while, as a lecturer on science, no less a man than the late Doctor Dunglison considered him one of the most successful he ever heard.

Dr. Patterson's thoughts were clear and to the point, his style eloquent, his analysis almost perfect, his learning abundant. He was, moreover, a modest man, and avoided mere ostentation and display.

In social life his conversation was charming, while his home was a centre of cultivation, refinement, and love. It makes me sad to think that of the group of five distinguished men, who were accustomed to meet for social intercourse, all are gone—Bethune, Dallas Bache, Dunglison, Kane, and Patterson, have passed into another world.

In 1828, Rev. Wm. H. DeLancy, D.D., was elected Provost.

In the city of Philadelphia, it is hardly necessary for me even to sketch the history of this learned and godly man. My eye can almost see the lofty spire of the church in which he ministered, and my ear is even now entranced with the music of its sweet chime of bells.

For six years, and until 1834, he went in and out before his pupils, many of whom live to-day, and must well remember his lessons of wisdom, replete with learning, his words of wise counsel, his pious example.

In 1834, Dr. DeLancy was elected the Episcopal Bishop of the then diocese of Western New York; from that period, and until the day of his death, his name and fame became the property of the Protestant Episcopal Church in the United States.

Just here I must pause, and for a few moments postpone my remarks concerning the man who was the successor of Bishop De Lancy as the Provost of this University. Presently I shall speak of him.

And now we have reached a period in the history of the University, when it seems to me as though I am about to speak, not of the dead, but of the living, for the remaining portraits and memorial windows remind me of the men who were the instructors of my youth, and whose names are signed to my own diploma.

I can see them now as one by one they enter the chapel, or sit in the class-room.

There was that very learned man, Henry Vethake, LL.D., born in 1792, in the Colony of Esequibo, Guiana, South America. He removed to the United States at four years of age. Having graduated at Columbia College, New York, he studied law. For one year he taught mathematics in Columbia College. In 1813, he filled the

chairs of Mathematics and Natural Philosophy at Rutgers, N. J., and of Chemistry and Mathematics at Princeton, from 1817 to 1821. Dr. Vethake was also a professor at Dickinson College and the University of New York, while at one time he was the President of Washington College, Virginia, and in 1859, the Professor of Higher Mathematics in the Polytechnic College in this city. He was a professor in the University of Pennsylvania from 1836 to 1859, while he was also its Vice-Provost in 1846, and finally from 1854 to 1859 was the Provost. As a man Dr. Vethake was kind, considerate, and the very soul of honor, and in the republic of letters he deserves a high rank. As a mathematician he was most eminent, while his knowledge in almost every branch of human learning was profound. Did time permit, it would be a labor of love to trace in detail the history of this remarkable man, and prove by incontestable evidence that he is justly entitled to the position assigned to him in this discourse. I have, however, said enough, and that very deliberately and advisedly, to perpetuate his fame in so far as it is possible on this occasion so to do.

There was Rev. Samuel Brown Wylie, D.D., who was born in Ireland, May 21, 1773, graduated at the University of Glasgow in 1797, and was a professor in the Theological Seminary of the Reformed Presbyterian Church from 1809 to 1851.

Dr. Wylie was a Vice-Provost from 1834 to 1845, and he held the Professorship of Ancient

Languages from 1838 to 1845, when he resigned and was elected an Emeritus Professor. When I knew this Vice-Provost he was advanced in years, but his mind was as bright as ever, and his Irish heart gushed out in expressions of tenderness and affection.

If he was not brilliant he was strong, and, as a teacher, his instruction was most valuable.

As a classical scholar his learning was profound, for his knowledge was built upon a foundation so solid that it could not be shaken. Besides all this, his acquirements in other branches of knowledge were extensive, and he was most thoroughly versed in moral philosophy and theology. Amid the lamentations of his students and the public, he died on the 14th of October, 1852, in this city.

And now another of my teachers appears before me, and, as I gaze upon his compact form and pleasant face, I recognize Alexander Dallas Bache, LL.D.

Born in Philadelphia, July 19, 1806, he died at Newport, R. I., February 17, 1867.

His mother was a daughter of Alexander James Dallas, and he was a grandson of Dr. Franklin.

He graduated at West Point in 1825, and until 1829 was a Lieutenant of Engineers, and was employed in constructing Fort Adams, at the entrance of Narragansett Bay.

From 1827 to 1832, he was the Professor of Mathematics in the University. Elected President of Girard College, he resigned his professor-

ship, and in 1836 spent some time in Europe inspecting the schools there, and on his return prepared an elaborate report of great value.

In 1839 he resigned his connection with Girard College, and from 1839 to 1842, was the principal of the Central High School of Philadelphia. On the 5th of August, 1842, he was again elected to the chair of Natural Philosophy and Chemistry in this institution.

The nation now demanded his services, and in 1843 he was appointed the Superintendent of the Coast Survey, a position which he held until his death.

In 1846 Dr. Bache was made a Regent of the Smithsonian Institution. Long before that time he had been elected President of the American Philosophical Society; while the University of New York in 1836, the University of Pennsylvania in 1837, and Harvard in 1851, had each conferred upon him the degree of LL.D.

The mere mention of the numerous positions most acceptably filled by Dr. Bache proves that he was no common man. Indeed one had but to know him to be satisfied that he was not only a cultivated gentleman, but an accomplished scientist. Without a particle of parade or display, with facility he imparted his knowledge to his pupils, and thus illustrated the abundant stores of learning at his command; he was cautious and accurate in his inductions, solid in his attainments, and eminently practical; altogether, this

professor was a most worthy descendant of the great Franklin.

Another of the professors was the gentle, courteous, and dignified Henry Reed, LL.D. As a lecturer and teacher he was distinguished for clearness of thought and purity of style; well versed in general literature, he was especially eminent in the department of rhetoric and English literature, over which he presided. His published essays, already familiar to the public, established his reputation as a writer, critic, and man of learning. The memorial window is the gift of the alumni. Born in Philadelphia, July 11, 1808, he graduated here in 1825.

Having pursued the study of the law under the direction of the Hon. John Sergeant, he was admitted to the bar in 1829; soon after, in 1831, he was appointed Assistant Professor of English Literature in the University, and, in 1835, was elected Professor of Rhetoric and English Literature. On the 7th of February, 1854, he was chosen Vice-Provost. His professorship became vacant, and, oh! how sad are the recollections which now cluster around the subject. On his return from Europe, the beloved professor took passage upon the ill-fated "Arctic," and with that vessel was lost at sea on the 27th day of September, 1854. Eighteen years have rolled into eternity since the sad event, but the features and form of my instructor live vividly in my memory, and his name and fame, with that of his colleagues, Wylie, Vethake, and Bache, are per-

petuated together in the memorial windows and portraits which adorn these walls.

Venerated and beloved professors, after a lapse of nearly thirty years, it has fallen to the lot of one of your pupils to proclaim your fame, to trace imperfectly your history, and to associate your names with this new building and this honored institution.

I see you once more gathered together now and here, and, as I pay this poor tribute to your worth and learning, let me for the last time exclaim, Hail and farewell!

A delicate and difficult duty now devolves upon me, for the true history of this institution requires me to notice the Provost from 1834 to 1852. Born upon the banks of the Passaic, in New Jersey, in 1793, at twenty-four years of age, and from 1817 to 1823 he filled the Professorship of Hebrew, Ecclesiastical History, and Church Government in the Seminary of the Reformed Dutch Church at New Brunswick, N. J. From 1823 to 1834 he was the pastor of the First Reformed Dutch Church at Albany, N. Y.

It has already been stated he was the Provost of the University from 1834 to 1852, and he served this institution for a longer consecutive period of time than any other provost.

Having resigned his office in 1852, he chose to spend the evening of his life among the associations and friends of his earliest years, and he therefore accepted the Professorship of Ecclesiastical History and Church Government in the

Seminary at New Brunswick, and of Mental Philosophy in Rutgers College. He continued in the active performance of his duties until his death. He died in this city, on the 8th day of September, 1857.

When, upon a pleasant afternoon in the early autumn of 1857, "devout men carried him to his burial," that eloquent and learned divine and christian gentleman, Rev. George W. Bethune, D.D., as he stood and gazed upon the prostrate form of his deceased friend, the late Provost, addressed the sorrowing congregation which crowded the ancient church at New Brunswick, N. J.

Though that gifted orator, for many years one of your trustees, has gone to his rest and his reward, he shall speak now, and thus an impartial tongue shall honor the memory of the dead.

Dr. Bethune, among other things, said: "His most striking characteristic was strength. His person was strong, his frame, large, firmly knit, and commanding, rose before you like a column on which no ordinary weight of public burden might be safely laid.

"His countenance was strong, the lines of thought deeply traced, his eye clear and almost stern.

"His voice was strong; no one who looked upon him and heard his Boanergic eloquence doubted his strength.

"His intellect was strong; culture and convictions of taste smoothed some of its rugged-

ness; his grasp was vigorous, his logic direct and determined, crushing the superficial semblancy of sophistry and art.

"His will was strong; the prompt energy of his convictions and the humility with which he obeyed well-ascertained principles made him determined, because he was sure.

"His affections were strong; if those who looked upon his muscular frame and hard features, or heard his stentorian voice, or were beaten down by his unadorned argument, thought him in temper harsh, or in spirit unkindly, they knew him not; to his friends, to all who knew him in social life or sought his counsel and sympathy, he was gentle, and kind, and considerate.

"His truthfulness was remarkable, his theology very grave. He chose ever the most liberal policy, and inclined to the most charitable judgment, hence fidelity in his duties and friendships was a distinguishing trait of his life in all his relations.

"His life was pure, grave, calm, consistent, industrious, and kind."

I can add nothing more, except to say that the name of that Provost was John Ludlow, D.D., LL.D. His surviving family tender their thanks to the generous donors of the memorial window, while they are most happy again to present to the University that portrait which, even now, as I speak, seems to cast upon me a father's smile and a father's blessing.

Having now finished the history of Founder, Provosts, Vice-Provosts, and Professors of the College and University, whose portraits and memorial windows are here placed, let me call your attention very briefly to the other memorial windows which grace the building, and to the gifts which adorn the library.

The literary societies, fired with a noble ambition, have each contributed a memorial window. The one, the Philomathean, perpetuates its name and that of its founders, from the year 1815.

The other, the Zelosophic, from the year 1829, when it was established.

Loving hearts and willing hands have been busy here, for the name and fame of a trustee who held office for nearly sixty-one years (from 1774 to 1835), that venerable and ever-to-be-beloved servant of God, Bishop White, lives here, and so, too, do the name and fame of a successor, another trustee, the godly and well-learned Bishop Potter.

As you ascend the stairway you will observe a most beautiful window. Its story is a simple one, and its lesson instructive. Fraternal affection has there adorned this building with a costly work of art, which preserves the name and commemorates the virtues of Alexander Benson, Jr.

Valuable collections of books have recently been presented to the University by the families of the late Stephen Colwell, Esq.; the late Evans Rogers, Esq.; and the late Dr. Charles M.

Wetherill, who died suddenly, and who therefore did not live to enjoy the fruit of his own labor, or to impart to his pupils and to the nation the knowledge which he possessed, and which had already made him eminent in the scientific world.

Portraits of the first and last named gentlemen, and a bronze bust of the lamented Evans Rogers, Esq., accompanied the gifts, and will be placed in the library of the institution.

And now, on behalf of the several donors, I present these precious memorials to the Board of Trustees of the University of Pennsylvania.

The University has entered upon a new era. Its learned Provost (to whom I acknowledge my obligations for most interesting information in regard to the College) and its able professors stand ready to sustain and advance its well-earned reputation.

Kindred institutions elsewhere have noble histories, and can point with pride to the eminent men who have, from the remotest period, been associated with them. The University of Pennsylvania only remembers the past, and with assured hope looks into the future, and where is the man who, as he calmly surveys the mighty influence produced upon the human mind, in time and for all eternity, by one such institution as this, will refuse with the speaker to exclaim, *Esto Perpetua.*

THE ACCEPTANCE.

Rev. Dr. MORTON, on behalf of the Trustees, accepted the memorial windows and portraits in the following remarks:—

In behalf of the Trustees of the University of Pennsylvania, I accept, with thanks, the valuable gift now offered.

That gift owes its value not only to its intrinsic worth, but also to the priceless associations which cluster around it. Consisting, as it does, of “memorials” of great and good men, of striking portraits of wise and worthy men, it is rich in suggestions of practical import and moral power. As the eye in its scrutiny passes slowly around the walls of this chapel, and falls, first on the stained windows, glowing with many-colored lights, and revealing many familiar and honored names, then follows the line of speaking portraits, which seem to be looking at the admitted glory of the autumnal sunshine—the past comes back upon us with amazing power, and reads many a lesson which the present may well lay to heart. These good and noble and often great men have departed. The places which knew them once know them no more. But, though dead, they still speak to us, and their lives and labors, pictured on the casements, and their painted portraits ranged along the walls, seem to fill this

chapel with solemn utterances and impressive thoughts.

“Soldiers! (said Napoleon, before the great battle which decided the fate of Egypt) soldiers! from the summit of those Pyramids forty centuries look down upon you.” It was a sublime and stimulating thought, well calculated to stir up the souls of the hearers to their lowest depths. Yet the centuries which looked down from those colossal structures were centuries of ignorance, cruelty, and grinding oppression, and the deeds to which those appealed to were stirred up were deeds of violence and bloodshed. But, to-day, I am able to say to this assembly, and especially to those who shall be students in these halls: Many years of grand efforts and noble achievements for the good of our race look down upon you from these walls, and should stimulate you to fight the good fight of faith, and virtue, and patriotism, and philanthropy. Our own poet has said:—

“Lives of great men all remind us,
We may make our lives sublime,
And, departing, leave behind us
Footprints on the sands of time,—
Footprints that perhaps another,
Sailing o’er life’s solemn main,
A forlorn and shipwrecked brother,
Seeing, shall take heart again.”

The lives of great and good men are here recalled by this noble gift of colored glass and pictured canvass. May we not hope that they will

have the influence they ought to exercise, and gloriously fulfil the expectation of the poet?

In behalf, therefore, of the Trustees of the University, I again thank the generous donors.

CONCLUSION.

At the conclusion of Rev. Dr. Morton's address a benediction was pronounced by Rev. Dr. Beadle, and the audience separated.

PROCEEDINGS IN THE EVENING.

IN order to give an opportunity to those who had been unable to attend the ceremonies of the morning, to inspect the building, the Trustees invited a number of gentlemen to be present on the evening of the day of the inauguration. The building was brilliantly illuminated on this occasion, and its beautiful architectural proportions, and the spaciousness of its interior arrangements, were seen to great advantage. After some time passed in visiting the various rooms, the guests were invited to proceed to the Assembly-room, where a collation had been provided.

After the collation, FREDERICK FRALEY, Esq., of the Board of Trustees, invited the attention of those present, and said that no arrangement had been made for formal addresses at this time, but that, still, the authorities of the University would be glad to hear from gentlemen present what impression had been made upon them by the ceremonies of the day, and by their inspection of the building in which they were assembled. It was most important to know how far the great work which they had undertaken was supported by the sympathy of the public.

The chairman then called upon JOSEPH HARRISON, JR., Esq., who spoke as follows:—

MR. PROVOST, PROFESSORS, AND GENTLEMEN:—

It may not be out of place when we consider the past and present importance of The University of Pennsylvania, that outside people should give utterance to such ideas as they may hold on the subject of Education.

I may in some degree entertain heterodox views on this subject, and, with all deference to yourself, Mr. Provost, to the Faculty of this Institution, and to this company, I willingly leave them with you for what they are worth, and do not in any way invite or desire discussion.

That education of some kind is of value to all, and absolute necessity to many, need not be pointed out or insisted upon at this day; but we may well consider what kind of education will most conduce to the best uses of the individual in the varied walks of life.

In one case, the youth who is well to do in the world, and has no apparent need to concern himself as to his means of living in the future, may desire, and may look toward attaining, a very high standard of education, not for the purpose of using it for his material benefit in the battle of life, but because he feels that it will be a pleasure to him to *know*,—that it will be discreditable to him to be *ignorant*,—The University of Pennsylvania is the place for him.

Another with a natural bent toward abstract science, with what is called genius too, if you please, and with a full understanding that what he may acquire in the schools *must* be his means for future support, seeks the spot where such necessary knowledge can best be found. The University of Pennsylvania is the place for him!

I have been speaking of the few, in the great mass of humanity; one class heaping up knowledge as a gratification and an ornament, and that other class, whose opportunities make it possible to turn their acquirements to account in the learned professions, as well as in other pursuits needing such knowledge, and thereby conducing to their pleasure as well as to their profit.

Let us now glance toward the practical toilers of our race, that greater number who fill the ranks of the grand army of producers; they who must strain body and brain to the utmost to first conquer a living, and from whose number in the past, as in the present, are recruited in almost every instance the managers and masters of our great industrial establishments.

Equal, perhaps, in all respects with those who bear off the honors at college, they seldom have time to spend at school after fifteen or sixteen, and they or theirs as seldom have means to spare above their ordinary wants. The University of Pennsylvania is no place for them.

A good deal is written and said in these days about a higher standard of education for those who fill the third place in this category—that

they should be taught chemistry, mathematics, and the other abstract sciences, so as to better fit them for the work in which they must strive to make a living.

I doubt very much the necessity or the value of these acquisitions, and I think, under the present condition of things, that the preachings and in part the practices of the hour are toward too high a standard of education for the man who must, *perforce*, start in life with the stern necessity of earning his daily bread without needless loss of time.

Keep him too late at school, and it will be perhaps too late for him to learn a trade. Keep him too late at school, and he will beget a distaste for such useful work as will best tend toward furnishing him with the means to live.

To my mind the very best knowledge that a young man can have at twenty-one, situated as I have just described, is that which he can turn to the best and most profitable account—that which will always be in demand.

“Oh!” exclaims one, “you cannot make good makers of machinery without this higher education, nor can you make a good dyer or founder without a full knowledge of the chemistry or the metallurgy that bears upon his trade.” True, in the main; but do not flatter yourself into believing that all those who achieve distinction in the industrial arts come from the number of those most highly educated, in the common sense of these terms.

That they might more easily have become masters and managers in their varied vocations had they possessed, at the outset of their career, the knowledge of a graduate of this University, or of the Philadelphia High School, is possible, but the chances might have been that those who fill the highest and most profitable places to-day might never have achieved distinction at all, in their callings, had they been kept out of the workshop until at or near their manhood. Too much education might have marred their fortunes for life.

In mechanical and other trades, it is the education of the workshop, and not the education of the schools, that is most required.

Teaching by the rule of thumb, as some call it, or rather by manipulation and practical application, is more needed by the mechanic and artisan at this day than theoretical science.

The most distinguished men now engaged as masters in the industrial arts are not from amongst the graduates of Universities or High Schools, and I fear that they will never be found, as a general rule, with those who have won high scholastic honors. Polytechnic schools, and such workshops as are sometimes found in colleges, can never make the first-class practical workman.

If you will scan the wide field of the mechanic, the engineer, and the manufacturer, you will find, with but few exceptions, that at the present moment the ruling minds are from the class of the early and persistent toilers in the workshop, and

it seems necessary, for developing the mind in practical things, that this kind of early training, this rough and tumble sort of discipline, must be encountered at first, to prepare the man for the better and higher work thereafter.

Ask those who are engaged in making improvements in machinery, and from whose labors the world is now so largely benefited, how much *they* depend upon the higher and more abstract branches of science. They may have learned in early life a smattering of mathematics only to be forgotten, but, when they need abstract calculations or elaborately finished drawings, they get others to do them. Their time is worth too much for that.

And, again, in the use of a material like iron; the theorist boasts, over his apparently unlearned competitor, that his calculations are made to a decimal, but the former has not yet learned that there are hidden blow-holes in cast iron, and hidden defects in other material, as well as other most important influences not calculable, that, if not allowed for, will set at naught all these nice calculations, and his work will be thus rendered worthless. An intuitive idea of proportion comes from practice in the workshop, which cannot be learned in the schools.

There is much that bars and hinders the learner, and a full supply of skilled labor is now a most crying want. Let us not keep the lad who must earn his own living out of the workshop by keeping him too long at school, thereby losing valu-

able time in acquiring a kind of knowledge that he seldom or never can use.

As in the past so it will be in the future, the bright boy and the brighter man will fill the best places as managers and masters. Mediocrity and stupidity will find their level, and they will continue to lament that they never had a chance.

The Chairman then called upon Rev. C. W. SHIELDS, D.D., Professor in the College of New Jersey, and representing the Faculty.

DR. SHIELDS. I came from Princeton to-day, sir, expecting the silent enjoyment of viewing this beautiful building, and also the intellectual entertainment which was afforded this morning; but of this part of the programme I had no knowledge. I am very glad, however, to have the opportunity, which you have so unexpectedly and so kindly afforded, of thanking you, in the name of the President and Faculty of the College of New Jersey, for your courteous invitation to be here to-day. More would have been glad to avail themselves of this invitation if their college duties had permitted. I beg to assure you, sir, that that old institution, its elder sister in the sisterhood of colleges, takes the liveliest and most cordial interest in the prosperity of the University of Pennsylvania. These two great institutions, as we learn from the eloquent Memorial Address this morning, have during all their history never maintained any other relations than

those of good neighborhood and generous rivalry. Some of the names which are most illustrious in your own history are also to be found in the catalogue of the graduates and professors of Nassau Hall. And the erection of such a building as this is a subject of rejoicing not only to us, but to all the colleges of the land, to every friend of learning and liberal education. Notwithstanding what is often said in these times, and in many cases justly said, in regard to the waste of money on stone and mortar, yet an institution like this, one which has a history and which has an assured future, owes it to itself that it should have a worthy visible embodiment before the public. This elegant edifice, especially that beautiful chapel, with its memorial windows, will itself exercise an educating influence over the students who are gathered within its walls; and the whole building will stand as a monument to connect the present with former generations, and with coming generations.

Colleges are among the most indestructible forms of social organization that exist; and where they have long existed it is surely but right that the material embodiment which they present to the public eye should be in keeping with their usefulness, and with their traditions, and with their prospects.

The opportunity which has been kindly afforded me of viewing the rooms in this edifice has been a great gratification. I know of nothing that can compare with it for the purposes for which it

is intended; and I am truly rejoiced to be able to say, in behalf of the college that I happen to represent this evening, that we are glad to witness the prosperity of this institution. And I beg to add, in concluding, my own personal gratification as a former resident of Philadelphia, and for more than fifteen years a member of one of the learned professions of the city, at the signs of growth and progress. I am glad to see that the University is keeping pace with the growth of the city, and that this Faculty of Arts, with its new sister Faculty of Science, is not falling behind the older and more distinguished faculties which have given this University such a world-wide renown. May its prosperity in the future be equal to that which it has enjoyed in the past! (Great applause.)

SPEECH OF EX-MAYOR FOX.

THE CHAIRMAN. Gentlemen, the Trustees of the University feel that they owe, to one who recently occupied the highest municipal position in the city, some tribute of their gratitude for his aid in promoting the erection of this building. He participated in the ceremonies attending the laying of the corner-stone, and he has taken since that time a deep interest in the progress of the work and in the welfare of that which was set in motion. I call upon the Hon. Daniel M. Fox. (Applause.)

Hon. DANIEL M. Fox responded in the following words:—

Mr. Chairman, I rejoice to-day very much in being present. I have had really a very happy afternoon. The picture presented to me of this magnificent pile, these spacious halls, the large gathering in the chapel and the speeches made there, seems to me to be sufficient for one day. I expected this evening to have the pleasure of listening to others rather than that I should be called upon. I am glad to have the opportunity of being here, however, and to say that I have listened with interest and satisfaction to the history of this institution as given to us by some of the eloquent gentlemen this afternoon. With that history, with the associations surrounding the University of Pennsylvania, with this wonderful and spacious accommodation for students, with Faculties now complete in every department of liberal instruction, and supported by such means of moral power as I see around me to-night, who can doubt the success of this institution and the brilliancy with which it shall perform the great work expected of it? As a citizen of Philadelphia, I should ask for it no better friends than these respectable and influential gentlemen who have evidently gathered here to-night to testify by their presence the interest they feel in the University by their recognition of the ample provision made here for the present and the generations that are to come.

It ought to be a proud day, and especially to

us of Philadelphia. This is the great institution of this part of our country. We ought all to be glad that it has its home in our own dear city, and that it has been planted just here. I am satisfied that the judgment which located the buildings west of the Schuylkill was the best judgment, and time as it goes on will confirm it. I believe the day will come—it may not be in our time, but it will come—when all the public institutions of learning and of benevolence in Philadelphia will be located west of the river, as they ought to be, away from the turmoil and bustle of the business portion of the city; and it seems to me that this has been a step in advance in that direction. The very presence of this institution here will invite and induce others, perhaps not of like importance, for there are not many equal to it, but others with great public objects, to come west of the river also.

You, sir, were kind enough to say, and to flatter me in saying, that I had something to do with the location of the institution at this place, whilst I occupied a public position. I can only say, sir, it happened in my time. (Laughter and applause.)

The Chairman then called upon Rev. Dr. GOODWIN, formerly Provost of the University.

Dr. GOODWIN, after referring to the pleasant recollections of his former relations with the Trustees and Faculty, went on to say:—

DR. GOODWIN. We have heard to-day of the past, an illustrious, magnificent past; and now

we have that before us which leads us to look forward to the future. May I not say, Mr. Chairman, that a more illustrious, more magnificent, and more glorious future is before this University than all that lies in the past? And it is some satisfaction to me to feel that I may remain, though connected with the past, yet still surviving in the present, at least a link in some measure connecting that illustrious past with the still more illustrious future. And I may say to these young men who have been connected with the University during the last ten or twelve years—those who have graduated or have entered the University between the years 1860 and 1871—that, as they look back upon the past and look forward to the future, there is much to stimulate them to do well their work in life; and I say to you, Mr. Chairman, what I have said to one of them this evening, that I trust those young men who have not yet had time to come forward to the front will yet give a good account of themselves.

Mr. Chairman, I said we have heard of the illustrious past, and we think of the glorious future. It is a magnificent thought and a gratification that few men can have in their lives. A new era for the University now begins. Now we may say: “*Magnus ab integro saeculorum nascitur ordo;*” and now: “*Incipient magni procedere mentes;*” and they will go on until the great ends of this University are more and more fully accomplished.

But, Mr. Chairman, I understand that one more

thing is wanting, and only one thing is not wanting; and before I sit down I wish to say to the gentlemen of the city who may be here present, more or less interested in the University, one thing is lacking—*more funds*. They will be furnished. But I have to say one other thing to these good friends of the University: they need not hope or expect that they will finish this work of giving by giving once. So surely as this University lives, and prospers, and grows, it will need more and more. An institution like this that asks for nothing is making little progress. A University, this University, like the daughters of the horse-leech, will say—will never cease to say—“give,” “give.” But, sir, like the fairest of the fair daughters of Job, Keren-happuch—cornucopiæ—the University will be an overflowing source of blessing, and of beauty, and honor, and glory, and light, and power, and knowledge, to all around. Nay, more and better, the University will be like that attribute of mercy which Portia eulogizes, which “blesses him that gives and him that takes;” blessing the giver in conveying the multiplied benefits of his gifts to generation after generation of happy recipients.

May the University of Pennsylvania always be able, with more pride than Cornelia, to point to “her jewels;” and may she never cease to be “a joyful mother of children!” (Great applause.)

THEODORE CUYLER, Esq., was then called upon.

MR. CUYLER.—Mr. Chairman, for myself and for you, too, and for those whom I see here, I am afraid I must express regret that your eye lighted upon me. However, sir, I will acknowledge your courtesy, and endeavor by avoiding much speaking not to abuse it.

It is thirty years and more since I left the classic shades of this old University; and now to come back, foot-worn and weary in the pathway of life, to meet again with old college friends, to lay again together the embers of old college friendship and strive to blow them into a flame, is in some sense a delightful task and in others a very painful one. It is painful, because when I look around I scarce see familiar faces any more. All those who occupied the chairs of Professors in this University when I had the honor of being a student in it, I think without an exception, have passed away and gone to their reward. Dr. Ludlow, the noble Provost of the institution in the days when I was a student, I followed to his grave in a neighboring city some years ago. Dr. Wylie, our admirable instructor in the classics, thorough, perfect, unsurpassed probably as an instructor in this country, rests from his labors. The gentle and refined Professor Courtenay, and the accomplished scholar, Professor Vethake, who succeeded him, have passed away. Alexander Dallas Bache, whom you knew and loved and under whose instructions I sat, is in his grave. And last of all, the noblest, purest, and most refined scholar with whom I ever had

the pleasure of association, Henry Reed, sleeps in the blue Atlantic.

I think, sir, I have covered the whole list of Professors here under whose instruction I sat; not one survives. And then, when I pass from the instructors and look around for my classmates, those bright-faced, happy youths with whom I met daily for so many years, some of them are in their graves, some of them are adorning the positions they occupy in life, all of them hirsute, gray, with faces wrinkled with the cares and duties and responsibilities of life, so altered from what they were when they wore the smiling faces I was accustomed to meet that I look at them as if they were almost strangers.

So you can well understand that I feel sad when I come here and look around to-night and see what changes have taken place. Why, the very old family roof itself is gone; the old halls where I was accustomed to go, in which I was accustomed to be instructed, have disappeared, or rather, they have been replaced by a grander and nobler structure—far, very far grander and nobler than that to which I was accustomed to go. But the associations are wanting; the memories are gone; and I look around and see nothing scarcely that reminds me of what I once knew and once felt when I was a student in the University. But yet, sir, for all that, I am glad it is gone, and I congratulate you from the bottom of my heart on the change that has taken place. Other students through long generations

will throng the halls of this noble building which you have erected here; they will have memories and associations connected with it; and for a long time to come, for generations, nay I hope for centuries to come, the old institution transplanted to this place will grow, increase, and flourish—I trust for all time. (Great applause.)

I thank you, sir, for the courtesy which called upon me, and regret that I have detained you so long.

SAMUEL DICKSON, Esq., spoke on behalf of the Alumni.

Mr. Chairman, very unexpectedly called upon in this manner, I can only say that, in common with all the Alumni, I have taken a deep interest in the University since graduating, and that we have all rejoiced in the erection of this edifice, and that the successful completion of this work would make it seem possible that that ideal which we have had before us, and to realize which for many years there seemed to be no effort made, may yet be accomplished. It has seemed to us that there was no reason why this University should not be a great and splendid institution. There has been an idea to some extent with the people of Philadelphia and with the people of this country that any college in a large city could not succeed. It is not so in Europe. The Universities of Berlin and of Paris have been the leading institutions of Europe. There is no

reason why the citizens of Philadelphia, taking a proper interest in this University, if they can feel that it is a successful competitor with other institutions in this country, should not send their sons here to be educated, as well as to Yale or Harvard or Princeton. And one means whereby that end will be accomplished, perhaps, will be for the Alumni of the University to be made to take a deeper interest in the institution itself. I believe that heretofore there has not been as much unity of feeling among the Alumni as there should be; the Alumni Society has not been a very successful organization; but in the future we have reason to hope that there will be a change. The French proverb says, "nothing succeeds like success;" and the prospects of the University now are such that the Alumni of the University will feel a new and greater pride in the institution, and I think there is every reason to hope that they will take a deeper interest in it, and that they will co-operate with the efforts of the Trustees and of the Faculty to make it what it should be.

On behalf of the Alumni, so far as it would be proper for me to speak for them, I certainly feel it a privilege to express our acknowledgments to the Trustees for their efforts in putting up this building and in securing the endowment for the University, and they have, I think, the cordial good-will and cordial sympathy of all the Alumni. (Great applause.)

The Chairman then called upon COLEMAN SELLERS, Esq., President of the Franklin Institute.

MR. SELLERS. Mr. Chairman, it is impossible for me to express in fitting terms the feelings excited within me at the connection of the name of the Franklin Institute with that of this University. I heard to-day that exceedingly interesting description of the beautiful windows that adorn your chapel. Prominent among those windows is that which is intended as a memorial of Franklin. In the matter of education, Franklin stood preëminently forward in this country; and the Franklin Institute has endeavored through its whole course since its origin to educate the mechanics of the city of Philadelphia. All connected with that Institute have felt the need of some place where those who desired to succeed as mechanics should have, what some of us too much lacked, the means of obtaining a liberal education.

I have heard this evening the remarks of my friend, Mr. Harrison, and I must say that I feel constrained to differ with him in some respects with regard to the kind of instruction that mechanics should receive. There are now throughout this country many eminent men who are prominent as mechanics. If you inquire into their career, you will find, in all probability, that they had but a simple common-school education; but my word for it, sir, they have, every one of them, regretted that they had not the means of obtaining knowledge that is now offered by this

noble institution. (Applause.) I myself have felt this deeply. Leaving school at the early age of fifteen to work upon a farm, and then finding my way as best I could into the workshop, all the time I could spare has been devoted to acquiring in after-life that knowledge the foundation of which should have been given to me when I was young. I see in my own children—I think of it every day—that what is wanted is some means to make those who are to be the leading mechanics of the country cultivated, well-educated men (applause); make them, not as I am, afraid to address an audience like this, but able to come forward and feel that they are speaking properly, at least, their mother-tongue.

Now, it is natural for all mechanics to think of that which produces a result in the light of a machine; they feel and know, that, when a need exists for the production of a certain machine, it is usually created. Pardon me, sir, for speaking of this great University of Pennsylvania as a mechanism, the object of which is to shape, to mould, minds into usefulness. There has been a need of this very machine, considered as a means of education; and it has been created not entirely new, but to the old parts new movements have been added to meet the requirements of the times. I see in it something far better than the so-called technical institutions of the country. I see science walking hand in hand with art. I notice that those young men who come here and enter the scientific course, at once feel that they must endeavor to acquire

something more than mere technical knowledge. I find that invariably, while they are anxious to acquire the knowledge that will aid them in their profession, still they want to listen to the worthy Provost in his instruction; they want to go to those Professors who will teach them something beyond demonstrations in the particular branches they are about to pursue. They feel that, if they can acquire that kind of education which will fit them to express properly what they know, they will be of more use to the community. I must say that the educated mechanic needs, beyond all things, mathematics as a basis. I never have believed in the "rule of thumb." I never have believed in that intuitive perception which would enable a person to shape a machine without a knowledge of the laws that govern matter and regulate its durability. For my part I have not got it. I feel that, step by step, and cautiously, each part must be measured and each part must be adapted to the purpose for which it is to be used, by careful mathematical calculation. I notice now, talking day by day to the students who are attending these halls, that that kind of information best needed for the mechanic is being imparted to them, and at the same time I feel that they are getting a taste for something which is more beautiful. They have awakened in them the poetry of words, of art, and of nature; and I can see, in the instruction they receive in the earlier part of their career, when they enter as Freshmen, and while their studies run parallel, as it were, with the tuition

imparted to those designed for the learned professions, that they there learn what is needed to enable them to properly express in language what they may afterwards acquire in science.

I can hardly find words to express the respect and esteem I have for this University. I feel that it must succeed. I see in it features better than in any institution of the kind in the world. And I feel confident that the citizens of Philadelphia will come forward promptly to aid the gentlemen who are so nobly and so diligently exerting themselves to perfect this great school, and give them the means to make it a decided success. (Great applause.)

In Memoriam

JOHN F. FRAZER, LL.D.

IN strange and mournful contrast with the joyful congratulations which were expressed on all sides on the day of the inauguration was the event which saddened all hearts on the succeeding day—the sudden death of PROFESSOR FRAZER. He had seemed to be in unusual health and spirits during the ceremonies, and on the next day had gone to the University to complete the arrangement of one of his rooms. While entering his cabinet of apparatus he fell dead without a moment's warning, his death having been caused by disease of the heart. Thus died one whose loss to the University, especially at this juncture, is well nigh irreparable. His colleagues of the two Faculties stand awe-struck by the blow which has deprived them of one who was not only the Senior Professor in the University, but also one of the most successful teachers of physics in the country; the world of science mourns the loss of one of its most brilliant illustrations, while his family can only think of him as the kindest and most devoted of husbands and fathers.

It has been thought appropriate to place on record here the action of the two Faculties and of the Alumni of the University, on the occasion of Professor Frazer's death.

The Faculties of Arts and of Science met in joint session at the University, Monday, October 14.

In the absence of Dr. Stillé, occasioned by severe illness, Professor Jackson, being called to the chair, stated the mournful event which had called them together—the death of the oldest member of the Faculty.

Professor Allen, LL.D., the next in seniority to Professor Frazer, spoke with much feeling of the loss which they had sustained.

Our deceased colleague, he said, was undoubtedly one of those men whom we spontaneously recognize as unique. With the liveliest animal spirits, with the keenest enjoyment at the same time of out-of-door activity and of elegant society, he was always, even at the gayest period of his life, an enthusiastic and systematic student. His mind was quick in its action and penetration beyond example. No man ever mastered a subject more rapidly, or could explain it more clearly or gracefully to others. He had received the most thorough classical training under my learned predecessor, the venerable Dr. Wylie, and did not merely keep up, but constantly extended, his acquaintance with the Greek and Latin authors. In some departments of French literature he was also a master: As a Professor no man ever performed his duties with more alacrity and energy, or with more perfect command of his subjects. His lectures were models. To his colleagues he was a delightful companion and a friend ever ready to oblige. He was one of those who attract and charm by an irresistible fascination. While brilliant in society, and chivalrous in his deportment towards women, he attached to himself, in the bonds of solid friendship, many whose friendship it was an honor to possess; these he never neglected or forgot, and they will never cease to cherish his memory.

Rev. Professor Krauth, D.D., spoke of his brief acquaintance with the deceased as inspiring him with the

largest respect for his range of thought and study, and his character as a thoughtful and serious man. He had been struck especially with the thorough manliness of Professor Frazer's character. All the world knew where to find him, and where he stood on every question. He was especially gratified to find that Professor Frazer heartily rejected many current scientific views, which he himself regarded as loose and unsound.

Professor Lesley, Dean of the Faculty of Science, spoke of the scientific life of Professor Frazer as recorded in the *Journal of the Franklin Institute*, a life of unwearied industry and patient thoroughness of research. He was not a brilliant discoverer, but he mastered the labors and writings of every class that bore on his own work, reading omnivorously in standard and periodical literature, and profiting largely by his thorough mathematical training, and his knowledge of French and German. He grasped science in its vast historical development, holding on with tenacity against mere innovations to the assured results of the past, and yet ever ready to admit the accuracy of new views and the superiority of new formulæ. In this historical study of the subject he was a fanatic for truth and righteousness. He spared no pretender, and acknowledged no lines of nation or party in his zeal to secure to the real discoverer and inventor the honor that was his due. The conscientiousness with which he discharged his duties here left him no time for the fresh researches and the public appearances, which would have added so much to his reputation, but he only sacrificed fame to usefulness. May his memory bind us more closely to each other.

After a few remarks by other professors, the following resolutions, offered by Professor Allen, were seconded and adopted:—

Resolved, That, as a mark of respect for the memory of our deceased colleague, the exercises of the Univer-

sity be suspended until the day after the funeral ceremonies.

Resolved, That the members of the Faculties of Arts and of Science attend the funeral in a body, and wear the customary badge of mourning for thirty days.

Resolved, That the chair of our deceased colleague, in the chapel, be draped in mourning for the remainder of the present term.

Resolved, That the following minute be entered upon the records of the respective Faculties, and that it be communicated to the family of the deceased, with the assurance of our sincere condolence with them in the great loss they have sustained: "The Faculties of Arts and of Science of the University of Pennsylvania have learned with the deepest regret of the sudden death of their colleague, Professor J. F. Frazer, LL.D., and desire to record their appreciation of the remarkable accomplishments of the deceased in science and in literature, and of the extraordinary services which he rendered to the University during the more than twenty-eight years of his professorship, as well as to the cause of sound learning and of wholesome and manly discipline. Our close and intimate relations to the deceased inspired us with the liveliest regard for him as a scholar and a gentleman, and we deeply feel his loss when we recall his unmeasured devotion to the duties of his department, his zeal for the interests of the University and its students, and his keen insight and practical wisdom in all matters of business. We unite with the scientific men of the whole land in deploring the sudden removal of a teacher and a master mind in the department of physical science."

A special meeting of the Society of the Alumni was held October 15, 1872, in the Chapel of the University, to take action upon the death of Professor Jno. F. Frazer, LL.D., of the Class of 1830; Vice-President Rev. Jno. W. Faires, D.D., in the chair.

The Chairman stated the object of the meeting, and spoke of the deceased, whom he had known for many years. He narrated many incidents of the early life of Professor Frazer, showing the early development of those great qualities which characterized his after life.

Dr. John Ashhurst, Jr., offered the annexed resolutions, which were unanimously adopted.

Thos. A. Biddle, Esq., seconded the resolutions in a speech highly eulogistic of Professor Frazer, and was followed, in similar remarks, by the Rev. Dr. James Clark (a classmate of Professor Frazer), Geo. D. Budd, Esq., Geo. Harding, Esq., Alfred Stillé, M.D., and the Rev. Dr. T. W. J. Wylie.

The Society also resolved to erect in the Chapel of the University a memorial of Professor Frazer, and the Chairman was instructed to appoint a committee of five to carry out the resolution.

The following gentlemen were appointed members of the committee: T. A. Biddle, Esq., Rev. J. W. Robins, John Ashhurst, Jr., M.D., Rev. T. W. J. Wylie, D.D., I. Minis Hays, M.D.

Resolutions of the Alumni.

Resolved, That, by the death of our lamented friend and associate, Professor John F. Frazer, LL.D., the University of Pennsylvania has been at once deprived of one of her most eminent sons and of one of her most distinguished and successful teachers.

Resolved, That, as Alumni of the University, we feel

most sensibly that by this sad event both she and we have sustained a loss which is well nigh irreparable.

Resolved, That, as a teacher and as a man of science, Professor Frazer stood alike pre-eminent, as well by his brilliant natural abilities as by his profound learning and his great and diversified intellectual and philosophical acquirements.

Resolved, That, by his personal example, by the generous kindness of his disposition, by his high sense of honor, by his hearty love and enthusiastic admiration for what was noble and right, and by his manly abhorrence of whatever was base and mean, Professor Frazer exercised over the minds of his students, and of all with whom he came in contact, an influence as excellent as it was powerful and enduring.

Resolved, That, feeling keenly our own loss of a loved and cherished teacher and much valued friend, we can thus more sensibly appreciate the yet greater and sadder loss sustained by his bereaved family, to whom we beg, hereby, to convey the assurance of our most respectful and heartfelt sympathy.

JOHN W. FAIRES,
Vice-President.

JOHN G. R. McELROY,
Recording Secretary.

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